

WHAT IS CLAIMED IS:

1. An isolated or recombinant polynucleotide encoding an antigenic polypeptide comprising at least 17 contiguous amino acids from the mature polypeptide from SEQ ID NO: 2, 4, 6, or 8.
2. The polynucleotide of Claim 1, encoding a mature polypeptide from SEQ ID NO: 2, 4, 6, or 8.
3. The polynucleotide of Claim 1, which hybridizes at 55° C, less than 500 mM salt, and 50% formamide to the coding portions of SEQ ID NO: 1, 3, 5, or 7.
4. The polynucleotide of Claim 3, comprising at least 35 contiguous nucleotides of the coding portion of SEQ ID NO: 1, 3, 5, or 7.
5. An expression vector comprising the polynucleotide of Claim 1.
6. A host cell containing the expression vector of Claim 5, including a eukaryotic cell.
7. A method of making an antigenic polypeptide comprising expressing a recombinant polynucleotide of Claim 1.
8. A method for forming a duplex with a polynucleotide of Claim 1, comprising contacting said polynucleotide with a probe that hybridizes, under stringent conditions, to at least 25 contiguous nucleotides of the coding portion of SEQ ID NO: 1, 3, 5, or 7; thereby forming said duplex.

9. A kit for the detection of a polynucleotide of Claim 1, comprising a polynucleotide that hybridizes, under stringent hybridization conditions, to at least 17 contiguous nucleotides of a polynucleotide of Claim 1.
- 5 10. The kit of claim 9, wherein said probe is detectably labeled.
11. A binding compound comprising an antibody binding site which specifically binds to at least 17 contiguous amino acids from SEQ ID NO: 2, 4, 6, or 8.
- 10 12. The binding compound of Claim 11, wherein:
- a) said antibody binding site is:
- 1) specifically immunoreactive with a polypeptide of SEQ ID NO: 2, 4, 6 or 8;
- 2) raised against a purified or recombinantly produced human IL-D80 or
- 15 IL-27 protein; or
- 3) in a monoclonal antibody, Fab, or F(ab)₂; or
- b) said binding compound is:
- 1) an antibody molecule;
- 2) a polyclonal antiserum;
- 20 3) detectably labeled;
- 4) sterile; or
- 5) in a buffered composition.
13. A method using the binding compound of Claim 11, comprising
- 25 contacting said binding compound with a biological sample comprising an antigen, wherein said contacting results in formation of a binding compound:antigen complex.
14. The method of Claim 13, wherein said biological sample is from a human, and wherein said binding compound is an antibody.
- 30 15. A detection kit comprising said binding compound of Claim 12, and:

- a) instructional material for the use of said binding compound for said detection;
or
- b) a compartment providing segregation of said binding compound.

5 16. A substantially pure or isolated antigenic polypeptide, which binds to said binding composition of Claim 11, and further comprises at least 17 contiguous amino acids from SEQ ID NO: 2, 4, 6, or 8.

17. The polypeptide of Claim 16, which:

- 10 a) comprises at least a fragment of at least 25 contiguous amino acid residues from a primate IL-D80 or IL-27 protein;
- b) is a soluble polypeptide;
- c) is detectably labeled;
- d) is in a sterile composition;
- 15 e) is in a buffered composition;
- f) binds to a cell surface receptor;
- g) is recombinantly produced; or
- h) has a naturally occurring polypeptide sequence.

20 18. The polypeptide of Claim 17, which comprises at least 17 contiguous amino acids of SEQ ID NO: 2, 4, 6, or 8.

19. A method of modulating physiology or development of a cell or tissue culture cells comprising contacting said cell with an agonist or antagonist of a primate
25 IL-D80 or IL-27.

20. The method of Claim 19, wherein:
- a) said contacting is in combination with an agonist or antagonist of IL-12; or
 - b) said contacting is with an antagonist, including binding composition comprising an antibody binding site which specifically binds an IL-D80 or IL-27.
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21. A composite cytokine comprising a plurality of segments of SEQ ID NO: 2, 4, 6, or 8 and SEQ ID NO: 10.
- 10 22. An isolated or recombinant polynucleotide encoding the composite cytokine of Claim 21.
23. A binding composition which specifically binds to an antigenic fragment of the composite cytokine of Claim 21.
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24. A receptor subunit:ligand composition comprising a plurality of polypeptide segments of SEQ ID NO: 2, 4, 6, or 8; SEQ ID NO:10; and SEQ ID NO:12.
- 20 25. A binding composition which specifically binds to an antigenic fragment of the receptor